

ABSTRACT OF THE DISCLOSURE

Multi-User Adaptive Modulation Scheme for MC-CDMA

In a multi-user frequency domain spreading downlink MC-CDMA system, a group of sub-carriers can be replaced by an equivalent sub-carrier of a conventional OFDM modem for purposes of resource allocation to improve the system performance. The chips for a given user are spread only within the group. Confinement insures synchronization between different users' chips that is essential to the recovering and separation of user symbols at the receiver. There is no limit imposed on the group size, which permits different spreading code lengths to be used for different scenarios or for performance tuning.